MODULE 27105

FLOOR SYSTEMS

(27105 LESSON 1)

SLIDE PRESENTATION

MODULE 27105, Part 1

OBJECTIVES

1. When you have completed this module, you will be able to do the following:
2. Identify the different types of framing systems.
3. Read and interpret drawings and specifications to determine floor system requirements.
4. Identify floor and sill framing and support members.
5. Name the methods used to fasten sills to the foundation.
6. Given specific floor load and span data, select the proper girder/beam size from a list of available girders/beams.
7. List and recognize different types of floor joists.
8. Given specific floor load and span data, select the proper joist size from a list of available joists.
9. List and recognize different types of bridging.
10. List and recognize different types of flooring materials.
11. Explain the purposes of subflooring and underlayment.
12. Match selected fasteners used in floor framing to their correct uses.
13. Estimate the amount of material needed to frame a floor assembly.
    - Demonstrate the ability to:
    - Lay out and construct a floor assembly
    - Install bridging
    - Install joists for a cantilever floor
    - Install a subfloor using butt-joint plywood/OSB panels
    - Install a single floor system using tongue-and-groove plywood/OSB panels

1.0.0 Introduction

- This module discusses the different methods of wood frame construction, as well as the materials and methods used in building floors in wood structures.
- The focus of the module is on platform frame construction, which is the most common method in use today.

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2.0.0 Methods of Framing Houses

- There are four basic methods of wood frame construction: platform, braced, balloon, and post-and-beam.
- Platform framing, also called Western or box framing, is used in most residential and light commercial construction.
- In platform construction, the floors are built first. The walls are framed on the floors, then raised into place and nailed to the floor system.
- Settling occurs in platform framing due to shrinkage of framing members. This can cause problems such as cracked walls, uneven ceilings, and poorly fitting doors and windows.
- Braced frame structures used in early times relied on corner posts, along with beams and girders. These were joined using mortise-and-tenon joints.

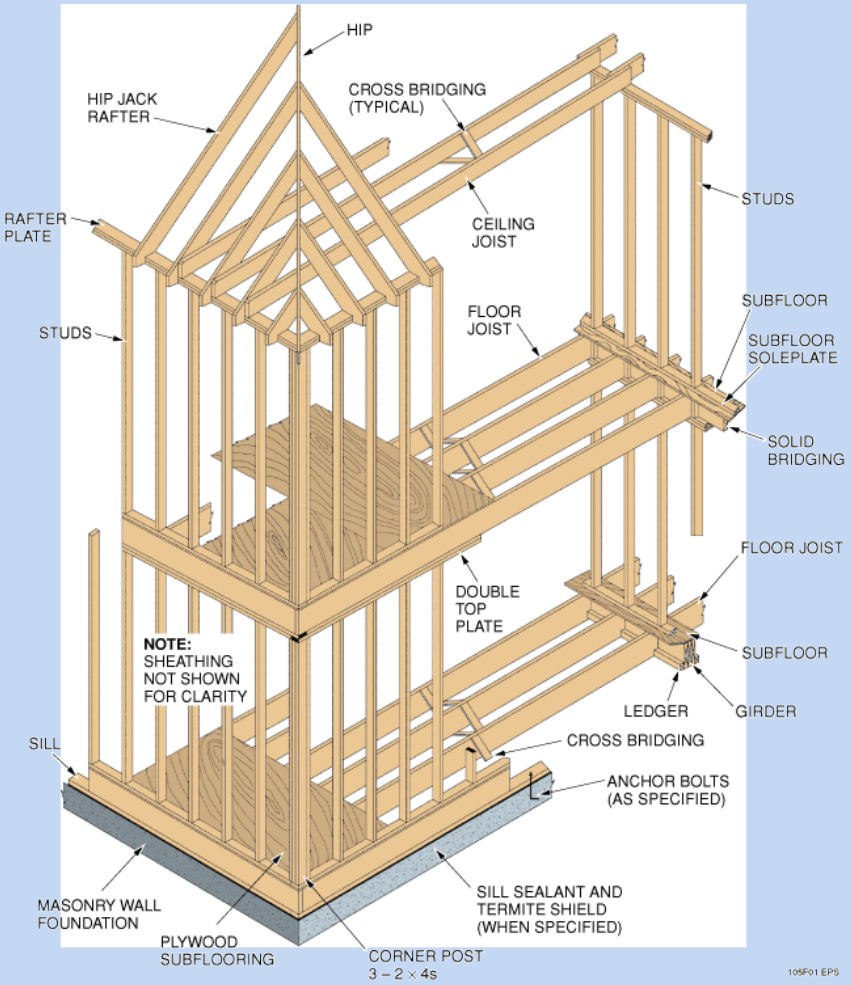

Figure 1 Platform framing.

2.0.0 Methods of Framing Houses

- In a balloon-framed structure, the studs are continuous from the sill plate to the **rafter plate**.
- This technique is no longer in common use, but may be required for gable construction in hurricane-prone areas.
- The joists on the second floor rest on a "ribbon" that is **let-in** to the studs.
- Balloon frames experience less shrinkage than platform framing.

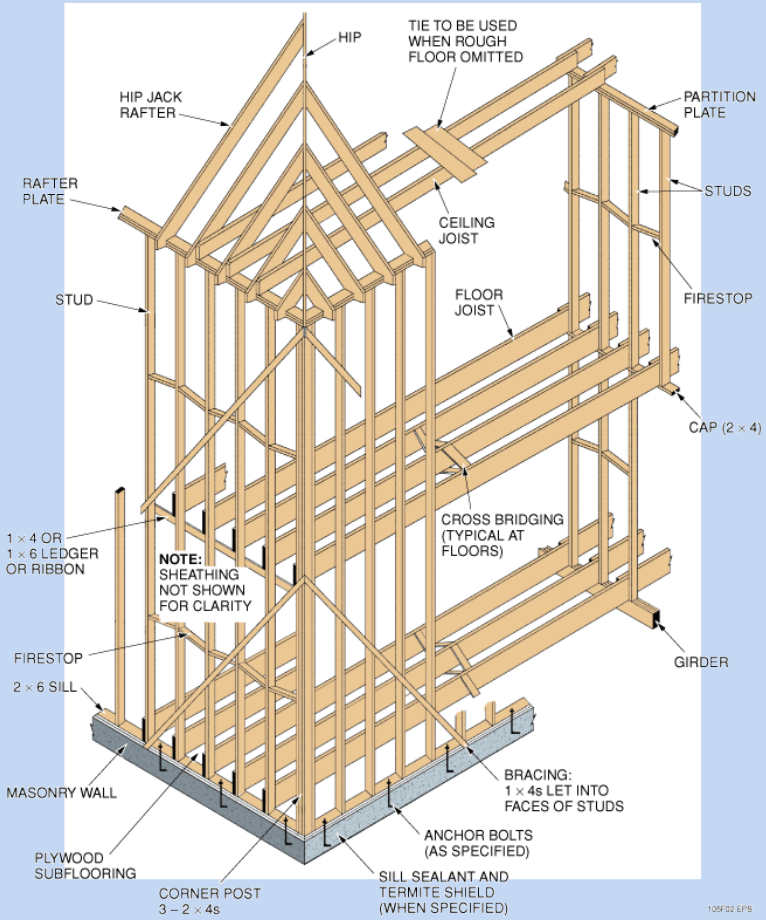

Figure 2 Balloon framing

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2.0.0 Methods of Framing Houses

- Post-and-beam construction uses large, widely-spaced timbers for joists, posts, and rafters.

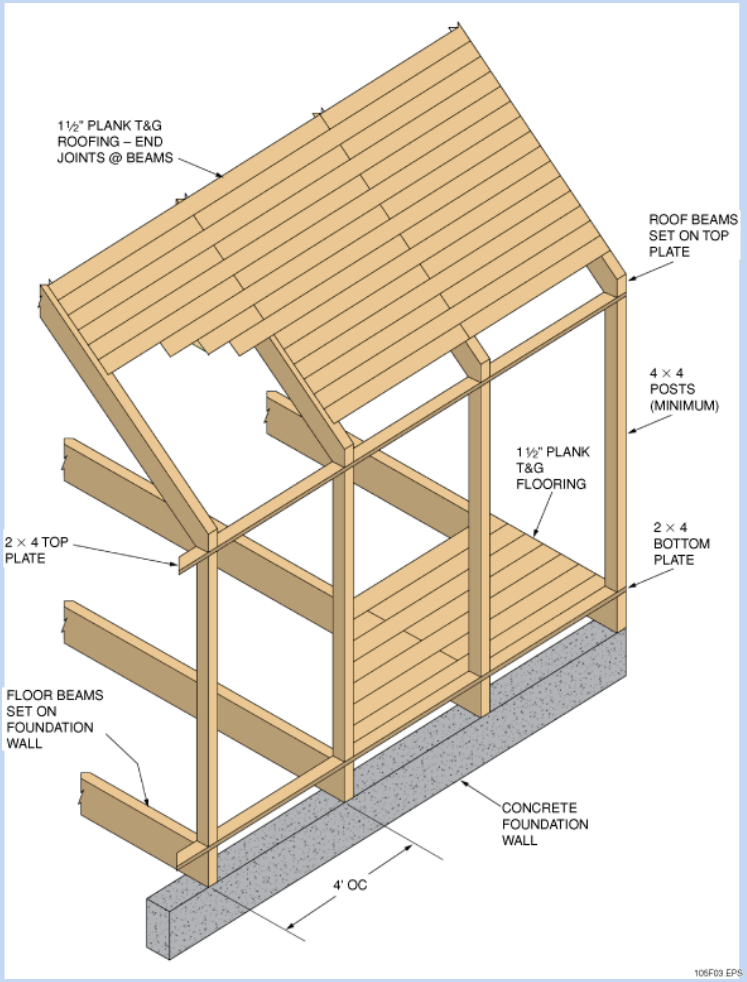

Figure 3 Post-and-beam framing.

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3.0.0 Building Working Drawings and Specifications

- The blueprints and specifications for a project provide all the information necessary to build or remodel a structure.
- The architectural drawings, including the foundation plan, floor plan, and section and detail drawings, contain the information needed by the carpenter.
- The floor plan contains vital dimensions, as well as locations of doors, windows, equipment, and fixtur

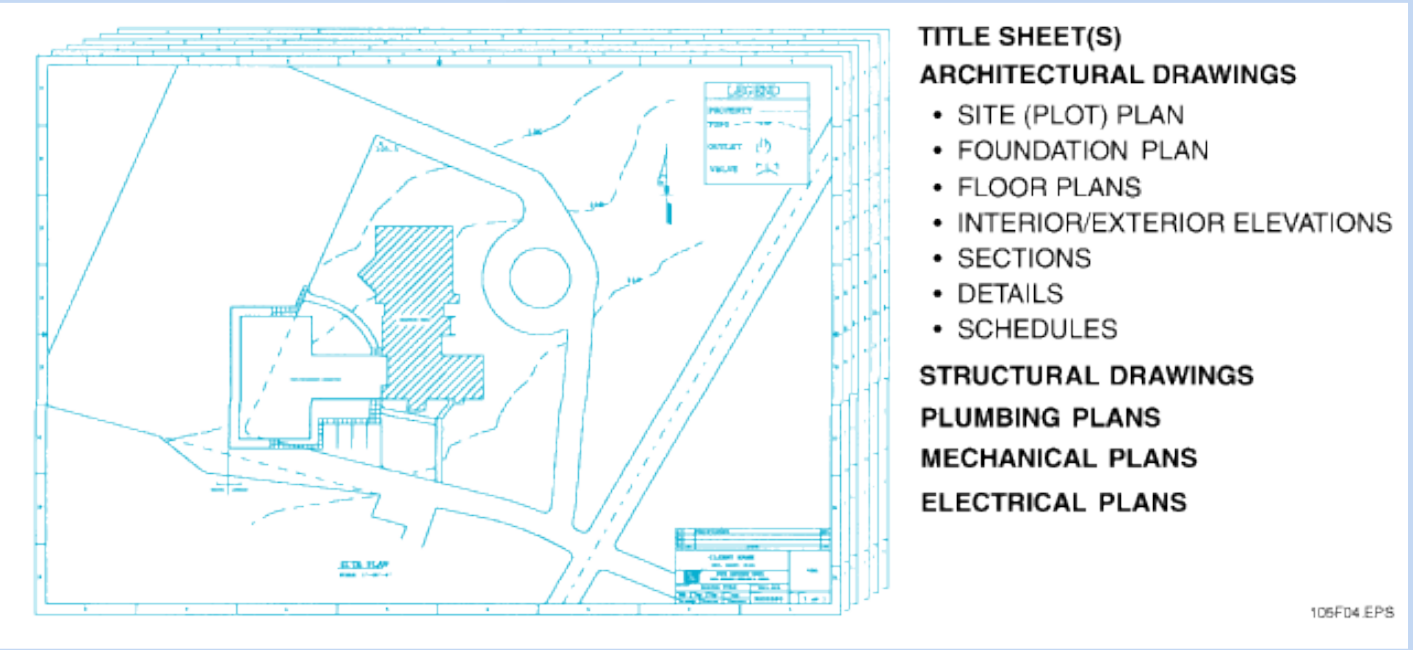

Figure 4 Typical format of a working drawing set.

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3.0.0 Building Working Drawings and Specifications

- Construction details are provided on the section and detail drawings.
- Plumbing, electrical, and mechanical plans provide locations of components for water, gas, electrical service, furnaces, air conditioning equipment and ductwork.
- Study the suggested procedure in text for reading blueprints.
- Specifications provide detailed descriptions of the work to be done, including materials, construction methods, and construction standards.

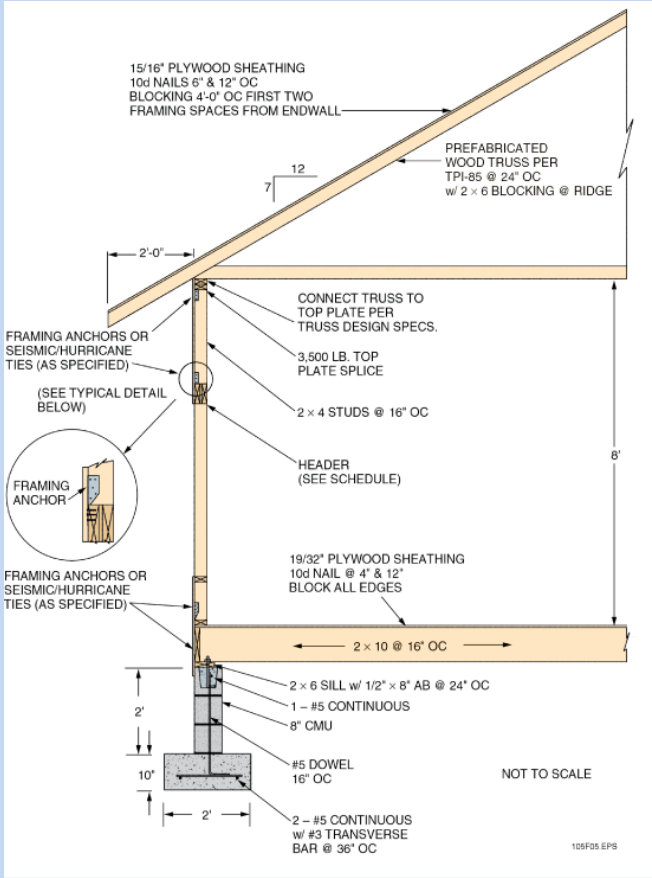

Figure 5 Typical section drawing.

End of Presentation